

Customer No.: 31,561  
Application No.: 10/709,038  
Docket No.: 09005-US-PA

AMENDMENTS

To the Specification

Please amend the paragraphs as follows:

[0040] Referring to FIG. 3D, a dielectric layer 317318 is formed over the first poly-Si layer 310 and the second opening 316, wherein the dielectric layer 317318 can be formed by, for example, performing a conventional process such as either LPCVD, PECVD or sputtering, wherein the dielectric layer 317318 includes a recess 320 neighboring with the second opening 316.

[0041] Referring to FIG. 3E, a second a-Si layer 318322 is formed over the dielectric layer 317318, wherein the second a-Si layer 318322 is formed by, for example, performing with a conventional deposition process such as a LPCVD, a PECVD, or a sputtering process. Thereafter, the resulting structure is subjected to a second laser annealing 322324 by performing, for example, an excimer laser annealing, to irradiate the second a-Si layer 318322. The energy density of the excimer laser is about 50 to 500 mJ/cm<sup>2</sup>.

[0042] Finally, referring to FIG. 3F, a second poly-Si layer 324326 is formed transformed from a fused portion of the second a-Si layer 318322 crystal growing in a lateral direction 326328, wherein an unfused portion of the second a-Si layer 318322 neighboring with the recess 320 serves as a seed for crystallization.

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[0048] Next, referring to FIG. 4D, a dielectric layer 417418 is formed over the first poly-Si layer 410 and the second opening 416, wherein the dielectric layer 417418 can be formed by performing LPCVD, PECVD or sputtering, for example. A second hole 420 is formed as an air space in the dielectric layer 417418, wherein the second hole 420 is neighboring with the second opening 416.

[0049] Furthermore, referring to FIG. 4E, a second a-Si layer 418422 is formed over the dielectric layer 417418, wherein the second a-Si layer 418422 is formed by performing LPCVD, PECVD or sputtering, for example. Thereafter, the resulting structure is subjected to a second laser annealing 422424 by performing an excimer laser annealing for example, to irradiate and fuse the second a-Si layer 418422. The energy density of the excimer laser is about 50 to 500 mJ/cm<sup>2</sup>.

[0050] Finally, referring to FIG. 4F, a second poly-Si layer 424426 is transformed from the second a-Si layer 418422 through fusion and crystallization. When the second laser annealing 422424 is performed, a portion of the second a-Si layer 418422 over the second hole 420 is subjected to a higher temperature than other portion of the second a-Si player 418422 relative to the second hole 420 because the thermal conductivity is poor around the second hole 420. A

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lateral crystallization progress from a region with lowest temperature (not shown) along the direction 426428 is performed, wherein the lateral crystallization lasts longer around the second hole **420**.